**GloSS and IKAN**

Many folks wish they could wave a magic wand and have an understanding of what their students know and understand about mathematics. They may believe that an online screener or a multiple choice benchmark provides information about a child's mathematical understanding, but this just isn't possible. Those screeners and benchmarks are only able to provide information on correct or incorrect answers, but don't provide any insight into why students choose answers, the reasoning of students, any misconceptions they may hold, and additionally, most screeners do not provide a way forward.

The only way to truly know what a child understands about mathematics is to have a deliberate, guided conversation with them about their thinking. There are a few excellent diagnostics which provide the opportunity for these types of conversations-

* Math Solutions Math Reasoning Inventory (which is free, but limited to use with 4th through 8th grade students) also has associated interventions (available through Scholastic for a fee)
* Math Recovery assessments (available for sale, must take training course to purchase)
* The Global Strategy Stages Assessment and Individual Knowledge Assessment of Number (the GloSS and IKAN) and interventions, available *for free* from New Zealand Mathematics.

The GloSS and IKAN are noteworthy because they provide an excellent source of information about student thinking and understanding, may be used with students beginning in Kindergarten and up to at least 8th grade, and are aligned with a wealth of interventions through the New Zealand Numeracy Project. Sounds like a no-brainer, right?

There are many benefits to using the GloSS and IKAN, such as:

* Everything, including extensive intervention materials, is available free of charge via the NZmaths website: <http://nzmaths.co.nz/numeracy-projects>
* Teachers grow in numeracy understanding as they use the diagnostics and interventions
* Easier to flexibly group students by strategy stage and use interventions found on the numeracy project
* Quick start at the beginning of the school year if student portfolios are maintained and travel from grade to grade with students
* Teacher conversations shift from concerns that students have no number sense to a focus on how to solve that problem through developing student reasoning
* Student growth is easily tracked from stage to stage
* Stages align with many of the Number and Operations, Operations and Algebraic Thinking, and Counting and Cardinality GSE
* Many of the early numeracy questions transfer to GKIDS scoring
* The IKAN and GloSS can serve as SLOs, benchmarks, and the data gathered informs RTI
* There is research to support the use of the GloSS and IKAN <http://nzmaths.co.nz/annual-research-and-evaluation-reports-and-compendium-papers>

So why isn’t everyone using GloSS and IKAN? Here are some of the reasons we’ve heard:

* *I don’t know how to administer the assessments.* There’s training available both on the NZmaths website, and via the Georgia Mathematics support wikis. Several Georgia teachers/coaches/consultants, including Nicole Anderson (Cobb), Lindsay Boyle (Learners Advantage), Katie Breedlove (Henry), Graham Fletcher (Griffin-Spalding), Whitney Fletcher (Henry), Brian Lack (Forsyth), Sarah Marshall (Henry), Vinnie Prasad (Cobb), Jenise Sexton (Gwinnett), Lya Snell (GADOE), and Mike Wiernicki (Henry) train districts in the use of GloSS and IKAN and the numeracy project.
* *The assessments take too long to administer.* The GloSS takes 15 minutes if being administered to an older student who has some strategy stage knowledge, and has no previous GloSS and IKAN data. If schools begin by assessing Kindergarten students, and add a grade each year, the information builds from year to year and the time to administer the assessments drops accordingly. The IKAN takes 10 minutes to assess an entire class, as it is administered whole group. Schools who have seen the student and teacher benefits reaped through use of the GloSS and IKAN feel the time investment is well worth it.
* *The assessment is too difficult to administer to students with disabilities.* Teachers who use the GloSS and IKAN find that they learn more about the thinking of their students with disabilities through these tools than they do with multiple-choice or computer-based assessments. The GloSS and IKAN help teachers become aware of strategies their students may be using. Without this diagnosis, the teachers would not know these strategies were being used by their students.

**Helpful links:**

Numeracy Project, GloSS, and IKAN: <http://nzmaths.co.nz/numeracy-projects>

Graham Fletcher’s Numeracy Project guide, how-to on creating a manual, and links: <http://gfletchy.com/numeracy-project/>

Georgia Math Educator Wiki GloSS and IKAN page: <http://ccgpsmathematics6-8.wikispaces.com/GLoSS+%26+IKAN>

GloSS and IKAN research: <http://nzmaths.co.nz/annual-research-and-evaluation-reports-and-compendium-papers>

Research on the Math Reasoning Inventory: <http://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=1308&context=dissertations>